

List of Contents

NUMBER 1

- | | | |
|---|-----|--|
| | iii | Softstrip® data strip containing the table of contents of this issue |
| J.-P. Berrut | 1 | Rational functions for guaranteed and experimentally well-conditioned global interpolation |
| J. C. Misra and S. I. Singh | 17 | Study on the mechanics of aneurysms in the left ventricle of the heart |
| M. R. Chernick,
V. K. Murthy and
C. D. Nealy | 29 | Estimation of error rate for linear discriminant functions by resampling: non-Gaussian populations |
| D. A. Murlo and C. C. Roth | 39 | An integral solution for the inverse heat conduction problem after the method of Weber |
| L. Devroye | 53 | The expected size of some graphs in computational geometry |
| G. Adomian | 65 | Elliptic equations and decomposition |
| W. J. Turner | 69 | Better leak detection in gas pipelines |
| D. J. Evans and
B. B. Sanugi | 77 | A nonlinear trapezoidal formula for the solution of initial value problems |
| J. Q. Zhen | | <i>Software Survey Section</i> |
| | I | BEM Code for 3-d potential theory for general purpose including temperature fields, magnetic fields, seepage, etc. |
| | IV | <i>Announcement</i> |

NUMBER 2

- | | | |
|--|-----|---|
| | iii | Softstrip® data strip containing the table of contents of this issue |
| W. A. Webb | 81 | A nonlinear public key cryptosystem |
| J. C. Misra and
S. Samanta | 85 | A mathematical model for the biomechanics of the body of a vertebra |
| N. Medhin and
M. Sambandham | 97 | Numerical solution of a system of random Volterra integral equations—1. Successive approximation method |
| R. P. Agarwal | 107 | Boundary value problems for second order differential equations of Sobolev type |

K. Ranai and P. H. Leng	119	Topological reliability analysis of local-area computer networks
R. S. Bucy and L. A. Campbell	131	Determination of steady state behavior for periodic discrete filtering problems
D. Greenspan	141	Quasimolecular channel and vortex street modeling on a supercomputer
M. Alborzi	153	Sampling plan
	159	Book Reports
	I	<i>Software Survey Section</i>
	IV	<i>Announcements</i>

NUMBER 3

	iii	Softstrip® data strip containing the table of contents of this issue
H. P. Singh, D. D. Tripathi and R. B. Mishra	161	Physical study of steady electromagnetofluid-dynamic viscous flows
S. J. Kim and J. T. Oden	169	A note on the numerical analysis of material damage based on the theory of materials of type N
S. Chowdhury and M. A. Breuer	175	Optimization algorithms for a class of nonlinear programming problems
Z. Zlatev and H. B. Nielsen	185	Solving large and sparse linear least-squares problems by conjugate gradient algorithms
D. A. Voss and S. M. Serbin	203	Two-step hybrid methods for periodic initial value problems
J. L. Lambert	209	Finding a partial solution to a linear system of equations in positive integers
L. F. Shampine and W. Zhang	213	Efficient integration of ordinary differential equations by transformation
H.-W. D. Chiang and S. Fleeter	221	Locally analytical prediction of the steady inviscid incompressible flow through an airfoil cascade
	235	Book Reports
		<i>Software Survey Section</i>
M. L. Chaudry	I	The queueing system $M^x/D/C$
	IV	<i>Announcements</i>

NUMBER 4

GRAPH THEORETIC MODELS IN COMPUTER SCIENCE

Frank Harary and Keith Phillips	vii	Preface
C. A. Barefoot and R. Entringer	241	Computer observations of cycles in cubic graphs
C. Esposito	247	Graph graphics: theory and practice
G. Exoo	255	Some new computer generated results in Ramsey graph theory
M. Goldberg and Z. Miller	259	A parallel algorithm for bisection width in trees
Niall Graham and Frank Harary	267	Covering and packing in graphs—V. Mispacking sub-cubes in hypercubes
Frank Harary	271	Cubical graphs and cubical dimensions
Frank Harary, John P. Hayes and Horng-Jyh Wu	277	A survey of the theory of hypercube graphs
Frank Harary and D. Frank Hsu	291	Node-graceful graphs
Frank Harary and Martin Lewinter	299	The starlike trees which span a hypercube
W. C. Herndon	303	Graph codes and a definition of structural similarity
William H. Julian	311	Banyan models for the parallel implementation of the fast Fourier transform algorithm
Michael J. Manthey and Keith Phillips	319	A unique hierarchy on the successive condensations of a digraph
D. Partridge	325	Connectionist networks qua graphs
F. Richman	333	Computers, trees and Abelian groups
R. W. Schvaneveldt, D. W. Dearholt and F. T. Durso	337	Graph theoretic foundations of pathfinder networks
	i	Softstrip® data strip containing the table of contents of this issue

NUMBER 5

	iii	Softstrip® data strip containing the table of contents of this issue
--	-----	--

Editorial

E. Y. Rodin	v	The importance of being Robert Maxwell: an appraisal
H. P. Singh, D. D. Tripathi and H. K. Pandey	347	The development of circulation-preserving MHD flows via spherical mapping
K. P. Chung	351	Steady state solution and convergence rate of time-dependent Markov chains of queuing networks
I. Bencsik and Gy. Michaletzky	359	Generalized least squares innovation representation
J. M. Martínez	367	An accelerated successive orthogonal projections method for solving large-scale linear feasibility problems
W. D. Gropp	375	Local uniform mesh refinement on loosely-coupled parallel processors
M. de la Sen	389	A robust indirect discrete adaptive-control approach based on passivity results for nonlinear systems
P. K. Bhattacharyya and S. Gopalsamy	405	An equilibrium finite element method for fourth order elliptic equations with variable coefficients
	425	Book Reports
	I	<i>Software Survey Section</i>
	V	<i>Announcements</i>

NUMBER 6-8

HYPERBOLIC PARTIAL DIFFERENTIAL EQUATIONS V

	vii	About this issue
	ix	Author's guidelines
Matthew Witten	xi	Foreword
T. V. Kostova	427	Numerical solutions of a hyperbolic differential-integral equation
S. A. Obaid and A. Benharbit	437	Stream functions of certain rotating cylinders
Q. Du, M. Gunzburger and W. Layton	447	A low dispersion, high accuracy finite element method for first order hyperbolic systems in several space variables
F. Bloom	459	Formation of shock discontinuities for a class of nonlinear transmission lines

B. Cahlon	473	Existence theorems of random solutions to stochastic functional integral equations
D. S. Chandrasekharalah, K. S. Srinath and L. Debnath	483	Magneto-thermo-elastic disturbances with thermal relaxation in a solid due to heat sources
F. Bloom	491	Almost global existence in the plane wave-nonlinear dielectric interaction problem
Jia Li	511	Persistence and extinction in continuous age-structured population models
S. S. Hu and X. M. Shao	525	Adaptive hybridized spline differentiators for numerical solution of the advection equation
L. A. Bales	535	Error estimates for single step fully discrete approximations for nonlinear second order hyperbolic equations
J. H. Swart	555	Hopf bifurcation and the stability of non-linear age-dependent population models
K. Schuhmacher and H. Thieme	565	Some theoretical and numerical aspects of modelling dispersion in the development of ectotherms
H. Holden, L. Holden and R. Høegh-Krohn	595	A numerical method for first order nonlinear scalar conservation laws in one-dimension
M. A. Astaburuaga, C. Fernandez and G. Perla Menzala	603	Huygens' principle and semilinear wave equations
E. A. Socolovsky	611	Lagrangian non-oscillatory and FEM schemes for the porous media equation
S. K. Dey	619	Effects of boundary conditions on numerical solution of implicit hyperbolic difference equations
E. J. Kansa	623	Shock computations with adaptive mesh refinement and moving grids
I. Györi	635	The method of lines for the solutions of some non-linear partial differential equations
D. J. Evans and M. S. Sahlmi	659	Group explicit methods for hyperbolic equations
M. S. Sahlmi and D. J. Evans	699	Group explicit methods for the numerical solution of the wave equation
G. Adomian	711	Corrigenda and comment on "A general approach to solution of partial differential equation systems"
	I	Softstrip® data strip containing the table of contents of this issue

NUMBER 9

	iii	Softstrip® data strip containing the table of contents of this issue
T. Wada, H. Akaike, Y. Yamada and E. Udagawa	713	Application of multivariate autoregressive modelling for analysis of immunologic networks in man
A. Tuzhilin	723	Atomistics as mathematical modelling and knowledge representation. Applications to systems analysis in computer and information sciences
H. S. Green and T. Triffet	743	Information processing by the cortex
G. Drauschke and M. Tasche	757	Exact deconvolution using number-theoretic transforms
P. L. Mills and P. A. Ramachandran	769	Mathematical modelling of chemical engineering systems by finite element analysis using PDE/PROTRAN
	795	Book Reports
	I	<i>Software Survey Section</i>

NUMBER 10

APPLICATIONS OF FUZZY SETS

E. S. Lee and J. C. Bezdek	vii	Preface
D. Dubois and H. Prade	797	Incomplete conjunctive information
L. Baowen, W. Peizhuang, L. Xihui and S. Yong	811	Fuzzy bags and relations with set-valued statistics
J. W. Davenport, J. C. Bezdek and R. J. Hathaway	819	Parameter estimation for finite mixture distributions
C. S. McCahon and E. S. Lee	829	Project network analysis with fuzzy activity times
J. Bigham	839	The inductive inference of pattern recognition rules which are capable of a linguistic interpretation
J.-Y. Wu, V. Van Brunt, W.-R. Zhang and J. C. Bezdek	863	Tower packing evaluation using linguistic variables
M. L. N. McAllister	871	Fuzzy intersection graphs
E. S. Lee and R.-J. Li	887	Comparison of fuzzy numbers based on the probability measure of fuzzy events
	I	Softstrip® data strip containing the table of contents of this issue

NUMBER 11

- iii
- Softstrip® data strip containing the table of contents of this issue

- M. R. Chernick, C. D. Nealy and V. K. Murthy** 897 Resampling-type error rate estimation for linear discriminant functions. Pearson VII distributions
- J. S. H. Tsai, L. S. Shieh and R. E. Yates** 903 Fast and stable algorithms for computing the principal n th root of a complex matrix and the matrix sector function
- L. Schroeder and S. Fleeter** 915 Locally analytic numerical method and application to viscous internal and external flows
- B. Codenotti** 933 The bit-cost of some algorithms for the solution of linear systems
- M. Haghighi** 939 Computation of prime numbers by using a probabilistic algorithm
- L. Baringhaus, N. Henze and D. Morgenstern** 943 Some elementary proofs of the normality of $XY/(X^2 + Y^2)^{1/2}$ when X and Y are normal
- J. C. Turner Jr and M. D. Gunzburger** 945 An analysis of finite element approximations for an algebraic model of turbulence
- O. Rand** 953 Harmonic variables—a new approach to nonlinear periodic problems
- H. Sugiyama and E. S. Lee** 963 Stochastic approximation—a powerful method for solving deterministic numerical problems
- S. H. Bakry and M. Shatila** 969 PASCAL functions for the generation of random numbers
- 975 Book Reports

I Software Survey Section

NUMBER 12

- iii
- Softstrip® data strip containing the table of contents of this issue

- J. Takche** 977 Complexities of special matrix multiplication problems
- B. B. Sanugi and D. J. Evans** 991 A new fourth order Runge–Kutta formula for $y' = Ay$ with stepsize control
- N. Friedman, A. Boyarsky and M. Scarowsky** 997 Ergodic properties of computer orbits for simple piecewise monotonic transformations
- C.-A. Wang and S.-J. Wang** 1007 Multiple similarity solutions of buoyancy induced flows for ice melting in cold pure water

N. Engersbach

1019 Great circle stereographic trajectory representation

**M. Torabi and
J. A. Dracup**

1029 A sequential linear programming approach to solve
mixed integer programming problems

Y. Wu

1041 The generating function for the solution of ODEs and
its discrete methods

1051 Book Reports

I *Software Survey Section*

